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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/679,820	10/06/2003	Cyrus B. Meher-Homji	51005/RDS/M60	3403

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EXAMINER

VERDIER, CHRISTOPHER M

ART UNIT	PAPER NUMBER
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3745

DATE MAILED: 09/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/679,820	MEHER-HOMJI ET AL.	
	Examiner	Art Unit	
	Christopher Verdier	3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 27 is/are allowed.
- 6) ☒ Claim(s) 1-3,5,6,8-13,17-22,24-26 and 28-39 is/are rejected.
- 7) ☒ Claim(s) 4, 7, 14-16, 23 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the combination of the dam comprising a strip extending diagonally across the air flow through the duct with a drain near the downstream end of the strip (claim 5), the drain on a non-horizontal portion of the air duct in combination with a dam extending into the air flow through the duct for directing water toward the drain (claims 6-7), the dam comprising a strip extending diagonally across the duct with a drain near the lower end of the strip (claim 8), the hollow cone with a perforated or porous surface on the cone (claims 12, 24, 26, and 29), the drain on a non-horizontal portion of the air duct in combination with a dam extending into the air flow through the duct for directing water toward the drain (claims 18-19), the dam comprising a strip extending diagonally across the duct with a drain near the lower end of the strip (claim 20), the guide vanes with a porous surface (claim 27), the vanes having a suction device for water and/or air (claim 27), only a downstream portion of the vane being porous (claim 28), only a downstream portion of the inlet cone being perforated or porous (claim 30), sucking water from a hollow strut (claim 37), and sucking water from a hollow inlet guide vane (claim 39) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

The drawings are objected to because in figure 1, the reference numeral "11" pointing to the compressor should be changed to -- 13 --, because in figure 6, the lead line for 33 should point to the circular tube, and because in figure 6, "34" should be changed to -- 35 --. Corrected

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drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities: Appropriate correction is required.

On page 4, line 32, -- a -- should be inserted after “of”.

On page 11, line 33, “an” should be changed to -- and --.

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The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

Claims 11 and 23, which recite that the drain comprises a dam around at least a portion of the cone, has no antecedent basis in the specification.

Claim 30, which recites only a downstream portion of the inlet cone is porous or perforated, has no antecedent basis in the specification.

Claim 32, which recites shielding at least a portion of the floor of the duct with a perforated sheet or screen, has no antecedent basis in the specification.

Claim 34, which recites sucking water from along at least a portion of the length of the dam, has no antecedent basis in the specification.

Claim Objections

Claims 14, 16, 23, and 31-35 are objected to because of the following informalities:
Appropriate correction is required.

In claim 14, line 3, “the” should be changed to -- a --.

In claim 16, line 2, “drain” should be changed to -- perforated --.

In claim 23, line 2, “the” should be changed to -- a compressor inlet --.

In claim 31, line 3, “the” should be changed to -- a --.

In claim 33, line 1, -- said step of -- should be inserted after “wherein”.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 10-12, 17-20, 28, and 37-39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 10 depends from claim 9 and recites that the drain is located on a compressor inlet cone, while claim 9 recites that the drain is on a floor of the duct. It is incorrect and inaccurate to claim the drain on a floor of the duct, and then claim that the drain is on a compressor inlet cone in a dependent claim, because these are actually different locations of different drains. Claim 11, which recites that the drain comprises a dam around at least a portion of the cone, is incorrect and inaccurate for the same reason. Claim 12, which recites that the drain comprises a hollow cone, is incorrect and inaccurate for the same reason. Claim 17, which recites that the drain comprises a perforated strut in the duct, is inaccurate, because it depends from claim 15 which recites that the drain is a perforated tube extending across a face of the duct, and it is inaccurate to claim that the drain a perforated tube in claim 15 and then claim that the drain is a perforated strut in the duct. Claim 18, which recites that the drain is on a non-horizontal portion of the air duct, is incorrect and inaccurate for the same reason (with reference to claim 10). In claim 18, last line, "the drain" is unclear as to which of the drains this refers to. In claim 28, lines 1-2, "only a downstream portion of such a guide vane" is unclear if this is meant to refer to all of the guide vanes, or a single one of the plural guide vanes. Claims 37, 38, and 39 respectively recite sucking water from a hollow strut, sucking water from a hollow compressor inlet cone, and sucking water from a hollow inlet guide

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vane. Claims 37-39 are indefinite because it is unclear if these hollow elements are meant to be the same “hollow structure” recited in claim 36, or are in addition to the “hollow structure” recited in claim 36.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 9-10, 12, 13, 22, 24-26, 29-30, 31, 36, and 38 (as far as claims 10 and 12 are definite and understood), are rejected under 35 U.S.C. 102(b) as being anticipated by Graemiger 1,400,813. Note the apparatus for removing water from compressor inlet air comprising an unnumbered compressor, an air inlet duct near 1 to the compressor, a drain (the vertical passage adjacent 26) connecting to the inside of the duct, and means 11 for lowering pressure in the drain to a pressure less than air pressure in the duct adjacent to the drain, with the drain located on a floor of the duct and a perforated plate or screen 30 overlying the floor, the drain also being located on a compressor inlet cone, a suction device 11 for air and/or water connected to the drain, the drain being located on the compressor inlet cone, the drain comprising the hollow cone and a perforated surface (the vertical passage adjacent 26) on the cone, only a downstream portion of the inlet cone being perforated. Also disclosed is a method of removing water from compressor inlet air comprising diverting water (by gravity and centrifugal force) on an

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unnumbered wall inside the duct to the drain, and sucking water from the drain with a pressure less than air pressure in the duct adjacent to the drain. Water is sucked from a hollow structure (the hollow compressor inlet cone near 1) upstream from the compressor 2 with a pressure less than air pressure adjacent to the suction inlet. The recitation in claim 1, lines 6-7 of “means for lowering pressure in the drain to a pressure less than air pressure in the duct adjacent to the drain” invokes 35 USC 112, sixth paragraph. No explicit definition in Applicants’ specification excludes the means 11 of Graemiger as an equivalent, and means 11 disclosed by Graemiger performs the identical function in substantially the same way and produces substantially the same result, and is therefore an equivalent to Applicants’ disclosed “means for lowering pressure in the drain to a pressure less than air pressure in the duct adjacent to the drain”.

Claims 1-2, 13, 31, and 36 are rejected under 35 U.S.C. 102(b) as being anticipated by Anderson 5,669,217. Note the apparatus for removing water from compressor inlet air comprising a compressor 5, an air inlet duct near 3, 4 to the compressor, a drain 3, 4 connecting to the inside of the duct, and means 22, 24 for lowering pressure in the drain to a pressure less than air pressure in the duct adjacent to the drain, with the drain located in an approximately horizontal portion of the air duct. Also disclosed is a method of removing water from compressor inlet air comprising diverting water (by gravity) on an unnumbered wall inside the duct to the drain, and sucking water from the drain with a pressure less than air pressure in the duct adjacent to the drain. Water is sucked from a hollow structure (the hollow compressor inlet) upstream from the compressor 5 with a pressure less than air pressure adjacent to the suction inlet. The recitation in claim 1, lines 6-7 of “means for lowering pressure in the drain to a

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pressure less than air pressure in the duct adjacent to the drain” invokes 35 USC 112, sixth paragraph. No explicit definition in Applicants’ specification excludes the means 22, 24 of Anderson as an equivalent, and means 22, 24 disclosed by Anderson performs the identical function in substantially the same way and produces substantially the same result, and is therefore an equivalent to Applicants’ disclosed “means for lowering pressure in the drain to a pressure less than air pressure in the duct adjacent to the drain”.

Claims 31 and 35 are rejected under 35 U.S.C. 102(b) as being anticipated by Webb 4,133,060. Note the method comprising diverting water 26 on a wall 7 inside a duct 10 to a drain 25, and sucking water from the drain with a pressure less than air pressure in the duct adjacent to the drain, with the water being sucked through a perforated tube 1/15. The recitation in claim 31, lines 1-2 of “of removing water from compressor inlet air” has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Claims 1-3, 13, 31, 33-34, and 36 are rejected under 35 U.S.C. 102(b) as being anticipated by Charron 6,273,674. Note the apparatus for removing water from compressor inlet air comprising a compressor 1, an air inlet duct 36 to the compressor, a drain 42j connecting to

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the inside of the duct, and means 8 for lowering pressure in the drain to a pressure less than air pressure in the duct adjacent to the drain, with the drain located in an approximately horizontal portion of the air duct. A dam 39 extends into the air flow through the duct for directing water toward the drain. Also disclosed is a method of removing water from compressor inlet air comprising diverting water (by dam 39) on a wall 40 inside the duct to the drain, and sucking water from the drain with a pressure less than air pressure in the duct adjacent to the drain. The step of diverting also comprises placing the dam 39 across a portion of the air flow through the duct and adjacent to the drain, and sucking water from the length of the dam. Water is sucked from a hollow structure (the hollow compressor inlet near 39, 40) upstream from a downstream compressor stage with a pressure less than air pressure adjacent to the suction inlet. The recitation in claim 1, lines 6-7 of “means for lowering pressure in the drain to a pressure less than air pressure in the duct adjacent to the drain” invokes 35 USC 112, sixth paragraph. No explicit definition in Applicants’ specification excludes the means 8 of Charron as an equivalent, and means 8 disclosed by Charron performs the identical function in substantially the same way and produces substantially the same result, and is therefore an equivalent to Applicants’ disclosed “means for lowering pressure in the drain to a pressure less than air pressure in the duct adjacent to the drain”.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 3, 5, 6, 8, 21, 32, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graemiger 1,400,813. Graemiger discloses an apparatus for removing water from compressor inlet air and a method of removing water from compressor inlet air substantially as claimed as set forth above, including a dam 29, 30 extending into air flow through unnumbered ducts, and a strip 30 extending diagonally across air flow through an unnumbered duct with a drain 22 near the downstream end of the strip, and with a drain (near 26) being on a non-horizontal portion of the air duct, with the drain (near 26) being on a floor of the duct, but does not disclose that the dam extends into air flow in the air inlet duct 1 for directing water toward the drain near 26 (claim 3), does not disclose that the diagonal strip 30 is located in the air inlet duct (claim 5), does not disclose that the dam 29, 30 extends into air flow through the inlet air duct for directing water toward the drain (claim 6), does not disclose that the dam in the form of a strip extends diagonally across the air inlet duct with a drain near the lower end of the strip (claim 8), does not disclose a perforated plate or screen overlying the floor (claim 21),

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does not disclose shielding at least a portion of the floor of the duct with a perforated sheet or screen (claim 32), and does not disclose sucking water from along at least a portion of the length of the dam (claim 34). That is, the dams/strips 29, 30 of Graemiger are not located in the air inlet duct to the compressor adjacent to the drain (near 26) that contains the means for lowering pressure 11.

The dams/strips 29, 30 of Graemiger are located adjacent to drains 18, 22 and provide the functions of preventing water from getting admixed with steam in the form of water drops and preventing too great a rate of evaporation. One of ordinary skill in the art would have recognized the desirability of providing these benefits in the air inlet duct adjacent to the drain near 26, because drain 26 functions similar to drains 18 and 22. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to locate the dams/strips 29, 30 of Graemiger in the air inlet duct 1, for the purpose of preventing water from getting admixed with steam in the form of water drops and preventing too great a rate of evaporation.

Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Wyman is cited to show a compressor with a drain 108 and means for lowering pressure 131. This reference could also have been applied as it anticipates at least claim 1, but is not applied at this time to avoid multiple rejections.

Allowable Subject Matter

Claim 27 is allowed.

Claims 4, 7, 14-16, and 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 28, 37, and 39 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

No meaningful determination may be made at this time with regard to claims 11 and 17-20, due to the indefinite nature of the claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Verdier whose telephone number is (571) 272-4824. The examiner can normally be reached on Monday-Friday from 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward K. Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C.V.
September 12, 2005



Christopher Verdier
Primary Examiner
Art Unit 3745